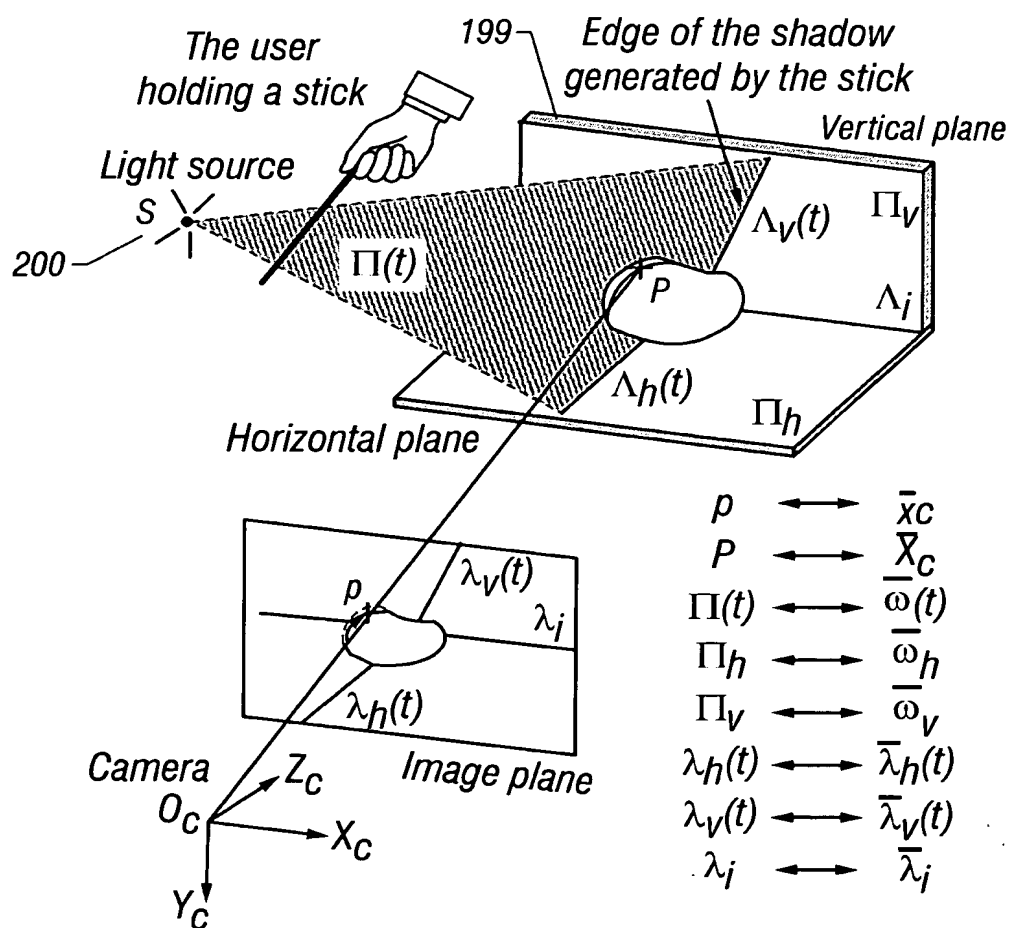
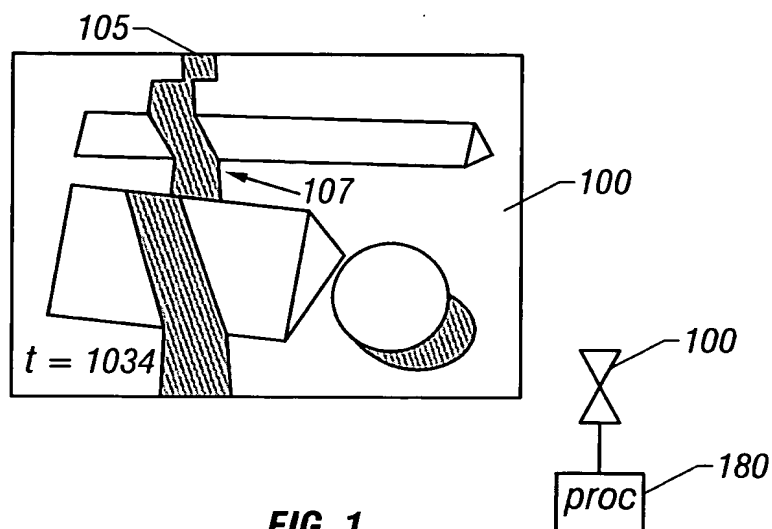


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- 300 — Calibration - find Π_H position 1) Shadow times at each pixel
- 305 — Obtain image of the shadow 2) Locate projections
- 310 — Convert projections (λ) into actual shadow info (Λ)
- 315 — Find shadow plane
- 320 — Find $P \leftarrow X_C$ by triangulation

FIG. 3

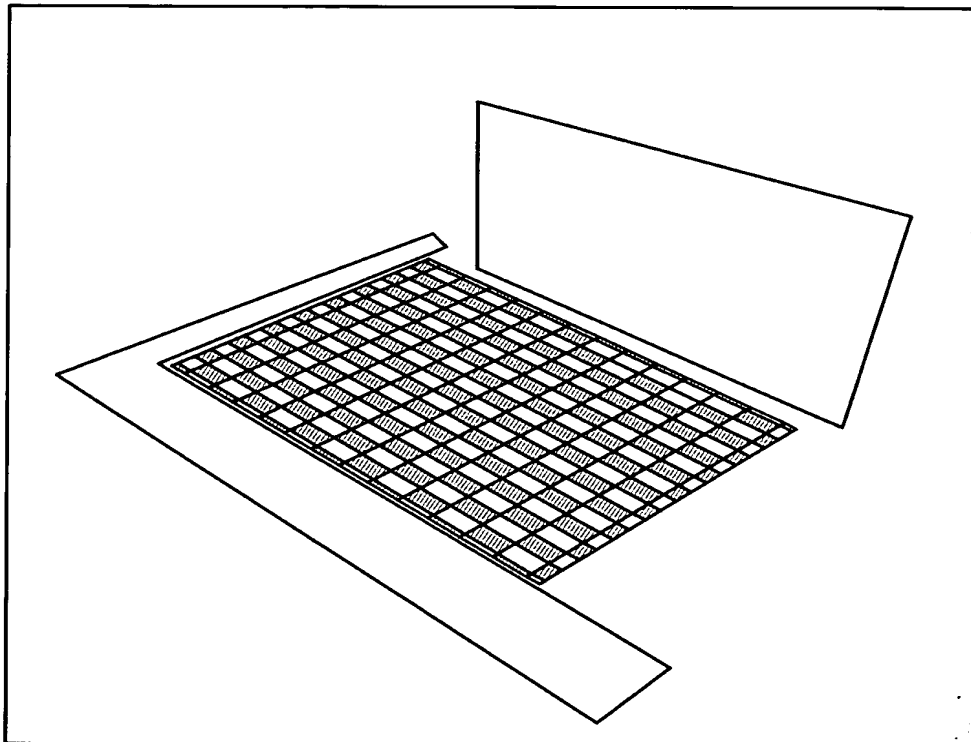


FIG. 4A

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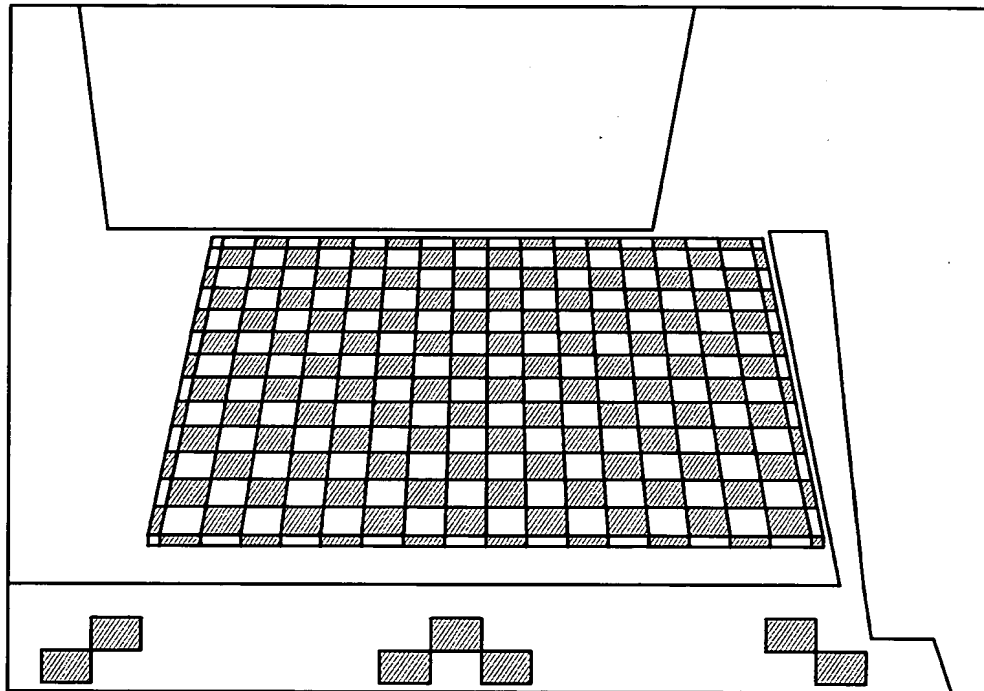


FIG. 4B

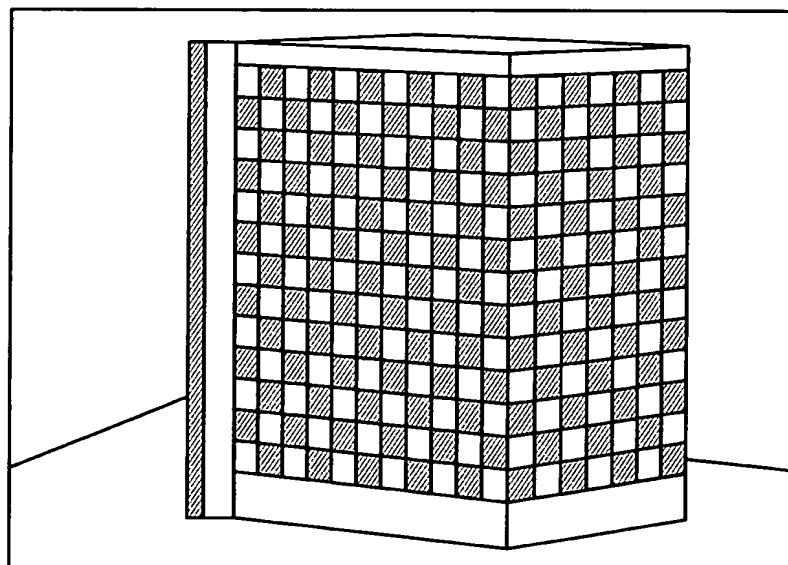


FIG. 5

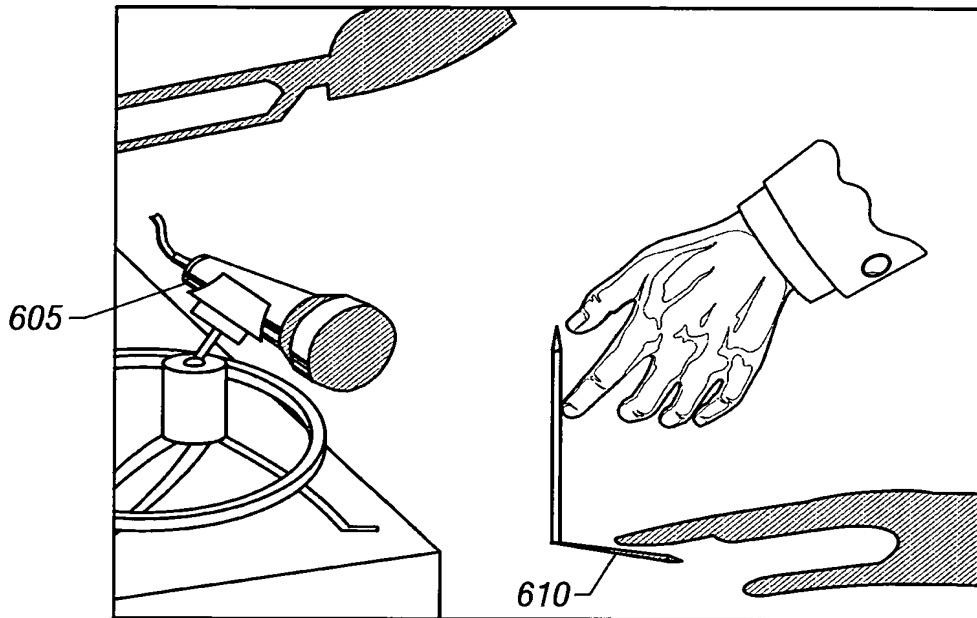


FIG. 6A

*A pencil of known height h
orthogonal to the plane*

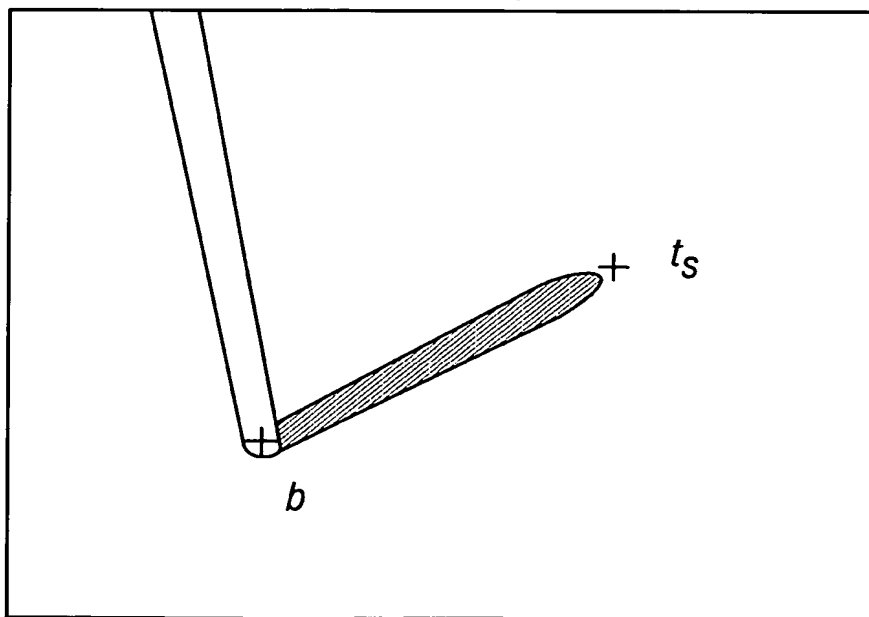


FIG. 6B

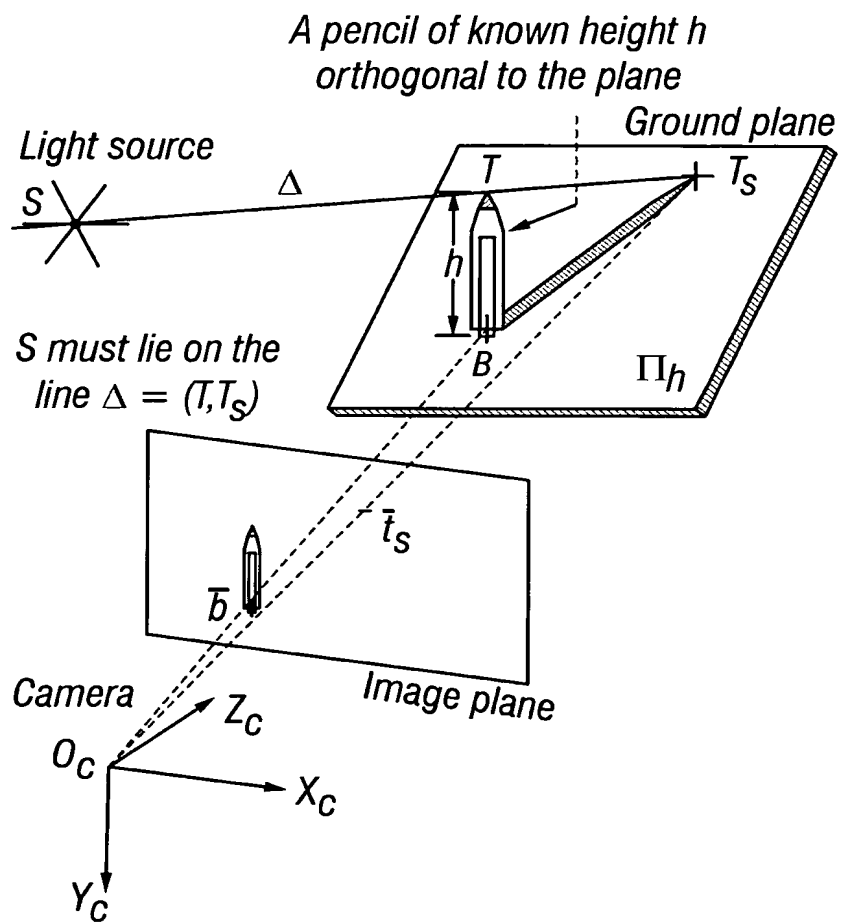


FIG. 6C

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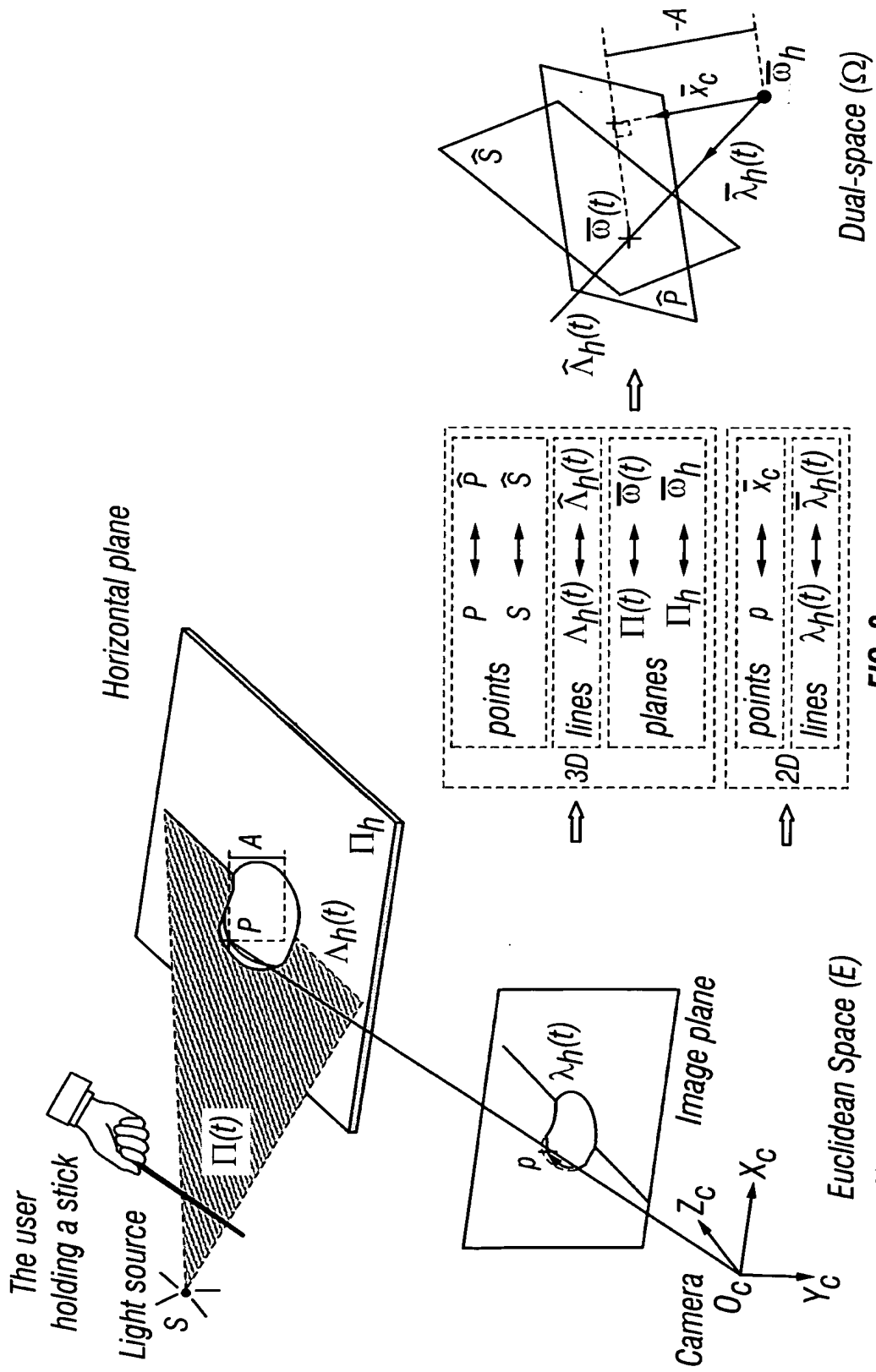


FIG. 8



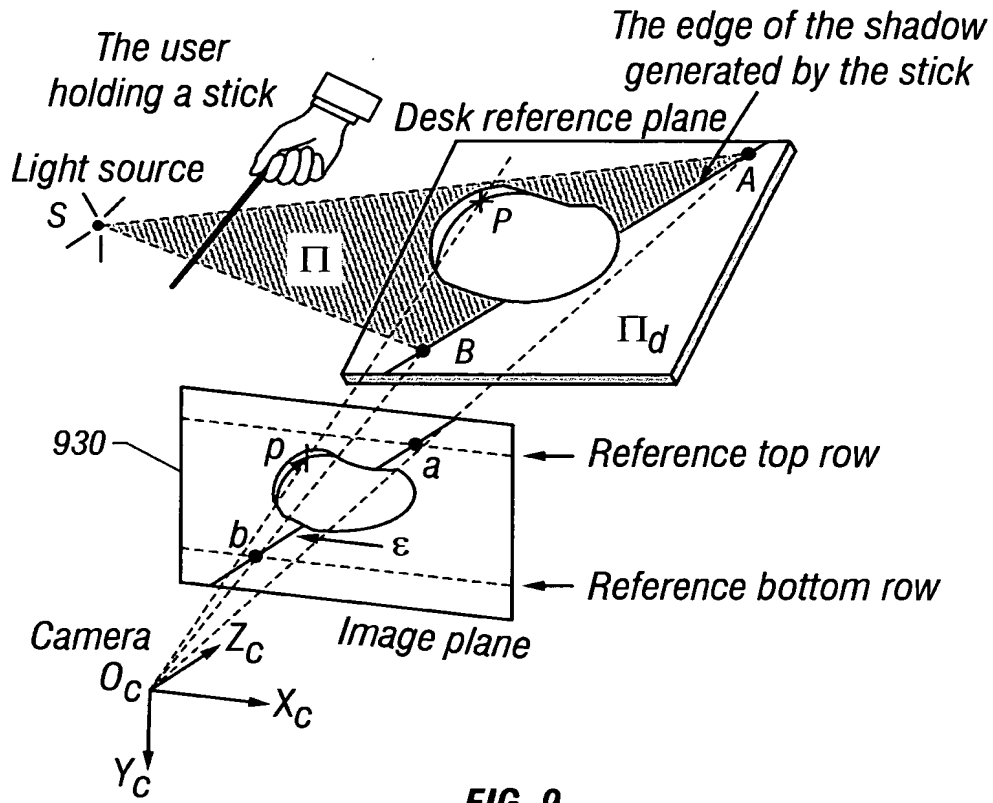


FIG. 9

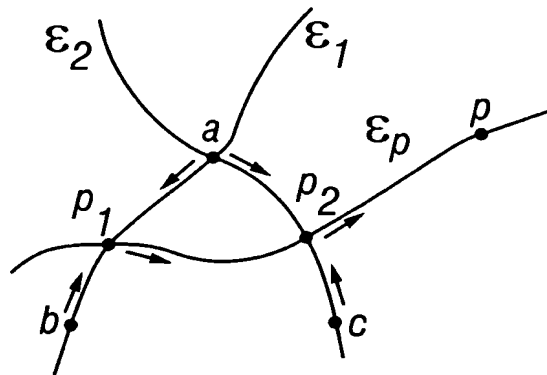


FIG. 10

successive steps:

- 1120 Step 1: Acquire a set shadow images, extract the shadow edges and compute their intersections.
- 1130 Step 2: Reject all isolated edges (and isolated groups of edges) so that the entire edge-web is fully connected (def. 2). Results a set of N edges \mathcal{E}_t , and N_p intersection points p_t .
- 1140 Step 3: Build the $2N \times 2N$ matrix C (eq. 7.10, 7.11 and 7.12), and compute the unitary seed vector \bar{U}^0 by SVD. Euclidean reconstruction is then achieved up to the three scalars α , β , and γ .
- Step 4: Select (at least) three points in the scene with known depths, and solve linearly for the remaining scalars α , β , and γ (eq. 7.13).
- Step 5: Compute the list of shadow plane vectors $\bar{\omega}_j$ (eq. 7.7 and 7.2) and triangulate all the points in the edge-web. The resulting set of 3D points may then be triangulated into a surface mesh for visualization purposes (fig. 7.5 and 7.6).

FIG. 11



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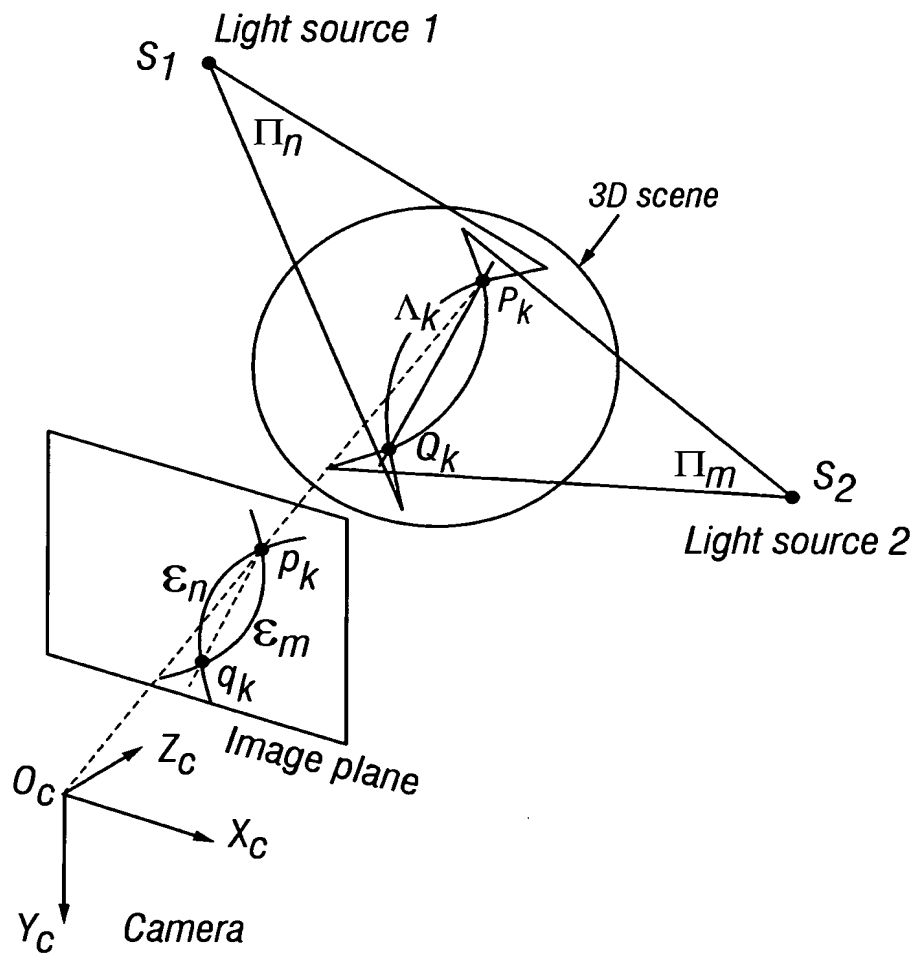


FIG. 14

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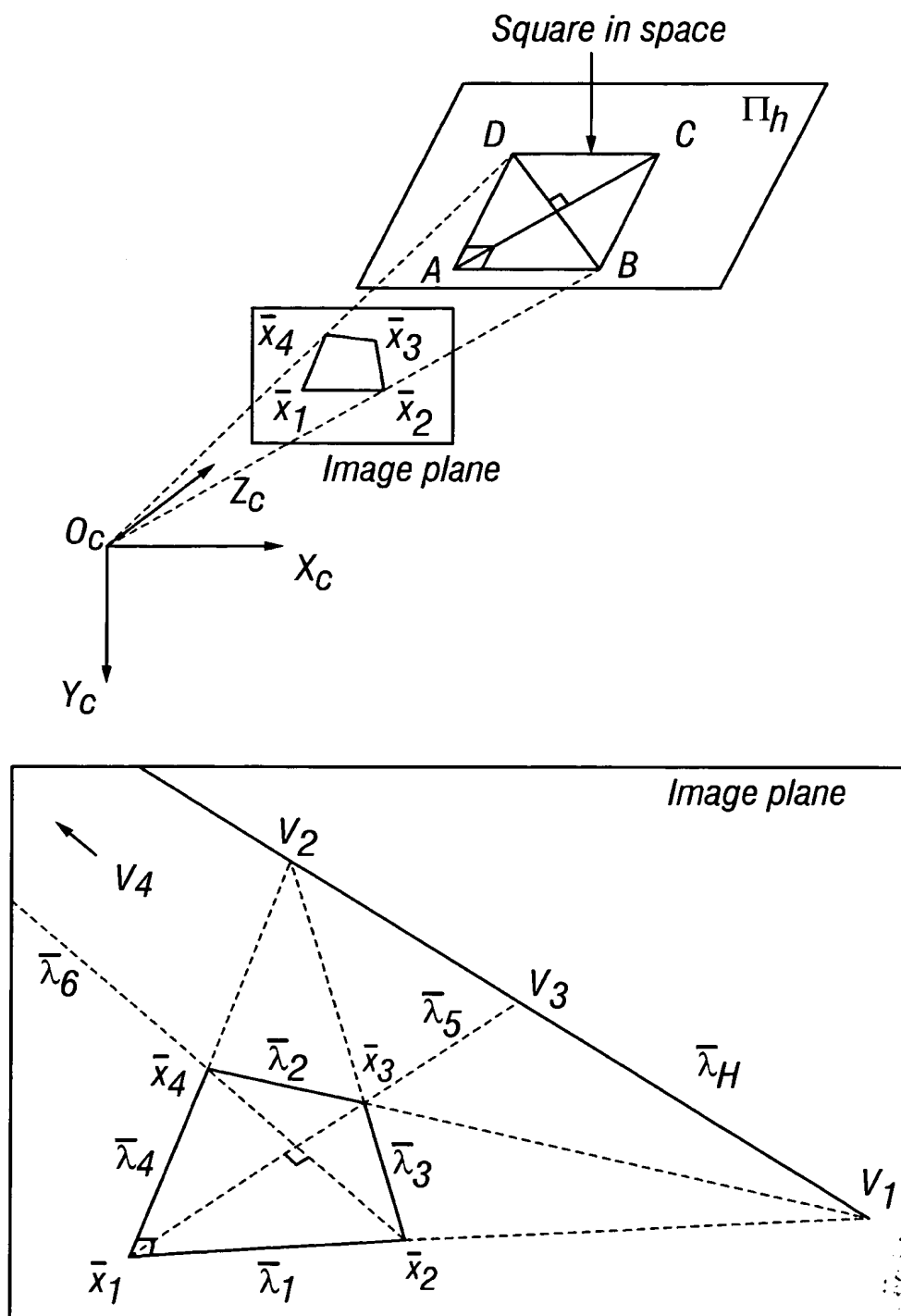


FIG. 15

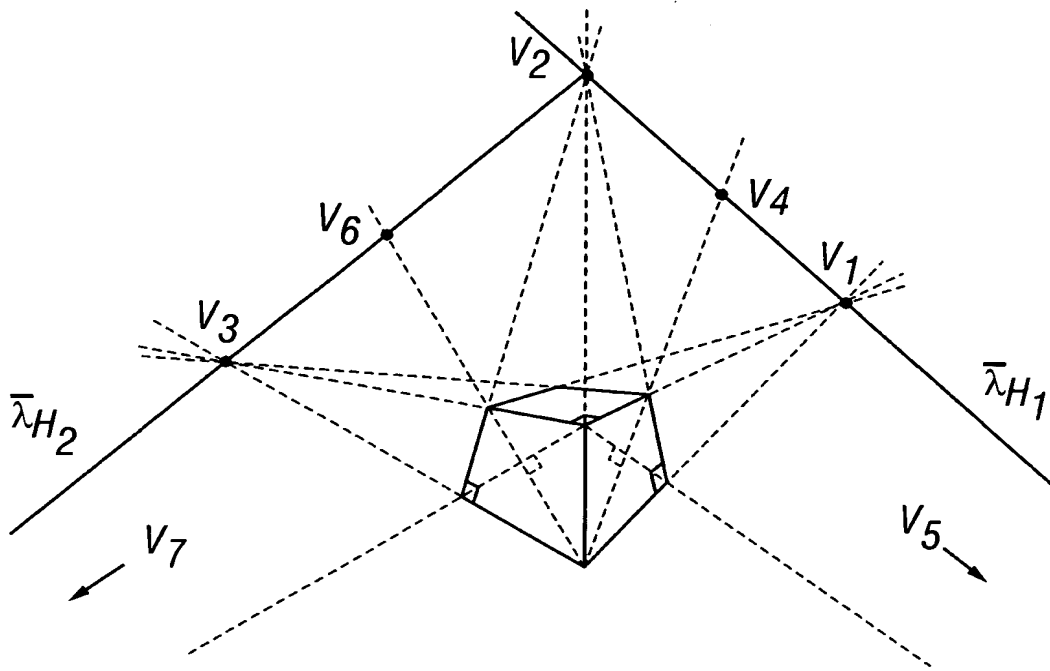


FIG. 16

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